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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,504	08/21/2003	Fujihiko Kobayashi	6340-000034	9674

27572 7590 07/25/2006

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EXAMINER
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DABNEY, PHYLESHA LARVINIA

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/646,504	KOBAYASHI, FUJIIHIKO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Phylesha L. Dabney	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
     4a) Of the above claim(s) 2-4 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1 and 5-7 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/21/03; 8/24/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This action is in response to the application filed on 21 August 2003 in which claims 1-7 are pending.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not understood whether the Applicant is claiming one plate or more. Furthermore, throughout the specification the Applicant teaches varying the thickness of a single plate, it is assumed for purpose of rejection that the thickness in select areas of the single plate is different.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima et al (U.S. Patent No 6,694,038) in view of Bank (U.S. Patent No. 6,795,561).

Regarding claim 1, Azima teaches a speaker comprising: a member (3); and a piezo-electric vibration plate (1, 7, 9) adhered to said member (3) for converting said vibration to sound, wherein thickness (figs. 1-2) of said piezo-electric vibration plate (1, 7, 9) is changed in accordance with the distance from the vibration center of said member (3).

Azima fails to teach the member (Azima "exciter") as being any type of driver including piezoelectric for generating a vibration in accordance with an applied electric signal.

Bank teaches that a member (exciter, col. 1 lines 41-42) can be piezoelectric which generates a vibration in accordance with an applied electrical signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a piezo electric member in the invention of Azima as taught by Banks for exciting the transducer over a selected frequency range.

Regarding claim 5, the combination of Azima and Bank teaches the piezo-electric speaker according to claim 1, wherein said piezo-electric vibration plate (1, 7, 9) is divided into several arbitrary configurations (col. 5 lines 15-40; modal sites for exciter locations as specifically taught by 08/707012 at col. 5 lines 16-55) and connected by said piezo-electric member.

Regarding claim 6, Azima teaches a piezo-electric speaker comprising: member (3), and a piezo-electric vibration plate (1, 7, 9) adhered to said member for converting said vibration to sound, wherein said piezo-electric vibration plate (1, 7, 9) is divided into several arbitrary configurations (col. 5 lines 15-40; modal and nonmodal and deadspots across the plate for determining exciter locations as specifically taught by 08/707012 at col. 5 lines 16-55) and the

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thickness of said piezo-electric vibration plate is different in select areas (per the 112 2<sup>nd</sup> rejection above, Azima teaches the thickness changing in figures 1-2).

Azima fails to teach the member as being any type of drive including piezoelectric for generating a vibration in accordance with the applied electric signal.

Bank teaches that a member (exciter, col. 1 lines 41-42) can be piezoelectric which generates a vibration in accordance with an applied electrical signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a piezo electric member in the invention of Azima as taught by Banks for exciting the transducer over a selected frequency range.

Regarding claim 7, the combination of Azima and Bank teaches the piezo-electric speaker according to claim 6, wherein an elastic member (polymer, col. 6 lines 40-48) is adhered to a surface of said piezo-electric vibration plate on an opposite side of said piezo-electric member to provide a uniform thickness (col. 6 lines 46-48) of each of said piezo-electric vibration plates.

### ***Response to Arguments***

Applicant's arguments filed have been fully considered but they are not persuasive.

With respect to claims 1 and 5, the Applicant argues that the Azima plate “*can be*” *monolithic*. The Examiner agrees that the Azima reference discloses a secondary embodiment (passage, col. 5 lines 13-14):

*1) FIG. 1 shows a loudspeaker comprising a panel (1) with an exciter (3) attached thereto. The exciter (3) excites resonant bending waves in the panel to cause the panel to emit sound. Electrical conductors (5) connect the exciter to an amplifier. The panel (1) is in this embodiment made from a core (7) and two skins (9). Alternatively, the panel may be monolithic.*

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However, the Examiner clearly outlined in the rejection that the multiple plate member primary embodiment (col. 5 lines 12-13) of Azima used for the piezo-electric vibration plate (1, 7, 9).

With respect to claims 6 and 7, the Applicant argues that the Azima plate *is not divided into several arbitrary configurations and the thickness of each of the several arbitrary configurations of the piezo-electric vibration plate is different from each other*. The Examiner disagrees. The Azima reference teaches the *plate divided into several configurations* (col. 5 lines 15-40; modal and nonmodal and deadspots are the several configurations located across the plate for determining exciter locations as specifically taught by 08/707012 at col. 5 lines 16-55). Furthermore, the Azima reference teaches *the thickness of each of the several arbitrary configurations of the piezo-electric plate is different from each other* in select areas (per the repeated 112 2<sup>nd</sup> rejection above, Azima teaches the thickness changing in figures 1-2 in a similar manner to the Applicant's invention).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L. Dabney whose telephone number is 571-272-7494. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P O Box 1450  
Alexandria, VA 22313-1450

**Or faxed to:**

(703) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

**Hand-delivered responses should be brought to:**

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 18, 2006

  
PLD

  
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